

WHAT IS CLAIMED IS:

- 1 1. A data storage device, comprising:
 - 2 media for storing data signals thereon;
 - 3 an actuator for positioning a write head relative to the media;
 - 4 a controller coupled to provide a control signal and the data signals, wherein
 - 5 the write head comprises:
 - 6 a data channel coupled to receive the control and data signals and
 - 7 coupled to start a timer upon receipt of the control signal, wherein the data
 - 8 channel is coupled to provide a write signal upon expiration of the timer; and
 - 9 a write amplifier coupled to detect the write signal and coupled to
 - 10 provide a flux inducing signal in response to the write signal upon detection of
 - 11 the write signal.
- 1 2. The data storage device of claim 1, wherein the control signal starts a
- 2 warm-up period for the data channel and write amplifier.
- 1 3. The data storage device of claim 2, wherein the warm-up period
- 2 expires when the write signal is provided.

1 4. The data storage device of claim 3, wherein the write amplifier
2 comprises:

3 a detector coupled to receive the write signal and coupled to assert an enable
4 signal upon detection of the write signal; and
5 a final write stage coupled to receive the write signal and coupled to provide
6 the flux inducing signal after assertion of the enable signal.

7 5. The data storage device of claim 4, wherein the final write stage
8 comprises:

9 a first transistor pair coupled to receive the write signal and coupled to
10 provide a first polarity of the flux inducing signal in response to a first level of the
11 write signal;
12 a second transistor pair coupled to receive the write signal and coupled to
13 provide a second polarity of the flux inducing signal in response to a second level of
14 the write signal; and
15 a switch circuit coupled to prevent the flux inducing signal prior to the
16 assertion of the enable signal and coupled to allow the flux inducing signal after the
17 assertion of the enable signal.

1 6. The data storage device of claim 5, wherein the first transistor pair
2 comprises N-type Field Effect Transistors.

1 7. The data storage device of claim 5, wherein the second transistor pair
2 comprises N-type Field Effect Transistors.

1 8. A write channel of a magnetic head controller comprising:
2 a data channel coupled to receive write data and a control signal and coupled
3 to start a timer upon receipt of the control signal, wherein the data channel transmits
4 the write data upon expiration of the timer;
5 a detector coupled to detect the write data and coupled to provide a write
6 control signal after detecting the write data; and
7 an amplifier coupled to receive the write control signal and the write data and
8 coupled to convert the write data into a magnetic head signal in response to the
9 write control signal.

10 9. The write channel of claim 8, wherein the detector comprises:
11 a logic circuit coupled to receive the write data and coupled to provide a
12 detection signal upon detection of a transition of the write data; and
13 a memory storage device coupled to receive the detection signal and coupled
14 to provide the write control signal.

- 1 10. The write channel of claim 9, wherein the amplifier comprises:
- 2 a first transistor pair coupled to receive the write data and coupled to provide
- 3 a first polarity of the magnetic head signal in response to a first level of the write
- 4 data;
- 5 a second transistor pair coupled to receive the write data and coupled to
- 6 provide a second polarity of the magnetic head signal in response to a second level
- 7 of the write data; and
- 8 a switch circuit coupled to prevent the flux inducing signal prior to the
- 9 assertion of the write control signal and coupled to allow the magnetic head signal
- 10 after the assertion of the write control signal.
- 1 11. The write channel of claim 10, wherein the first transistor pair
- 2 comprises N-type Field Effect Transistors.
- 1 12. The write channel of claim 10, wherein the second transistor pair
- 2 comprises N-type Field Effect Transistors.

1 13. A write channel of a magnetic head controller, comprising:
2 a data channel means coupled to receive write data and a control signal and
3 coupled to start a timer upon receipt of the control signal, wherein the data channel
4 means transmits the write data upon expiration of the timer;

5 a detector means coupled to detect the write data and coupled to provide a
6 write control signal after detecting the write data; and

7 an amplifier means coupled to receive the write control signal and the write
8 data and coupled to convert the write data into a magnetic head signal in response
9 to the write control signal.

10 14. The write channel of claim 13, wherein the detector comprises:

11 a logic circuit coupled to receive the write data and coupled to provide a
12 detection signal upon detection of a transition of the write data; and

13 a memory storage device coupled to receive the detection signal and coupled
14 to provide the write control signal.

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- 1 15. The write channel of claim 14, wherein the amplifier comprises:
2 a first transistor pair coupled to receive the write data and coupled to provide
3 a first polarity of the magnetic head signal in response to a first level of the write
4 data;
5 a second transistor pair coupled to receive the write data and coupled to
6 provide a second polarity of the magnetic head signal in response to a second level
7 of the write data; and
8 a switch circuit coupled to prevent the magnetic head signal prior to the
9 assertion of the write control signal and coupled to allow the flux inducing signal after
10 the assertion of the write control signal.
- 1 16. The write channel of claim 15, wherein the first transistor pair
2 comprises N-type Field Effect Transistors.
- 1 17. The write channel of claim 16, wherein the second transistor pair
2 comprises N-type Field Effect Transistors.

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1 18. A method of operating a write channel of a magnetic head controller
2 comprising:

3 establishing a write stabilization period while remaining in a read mode of
4 operation;

5 transmitting write data when the stabilization period expires;

6 detecting the write data to cancel the read mode of operation; and

7 converting the write data to a magnetic head flux signal in response to
8 detecting the transmitted write data.

1 19. The method of claim 18 wherein establishing the write stabilization
2 period comprises setting a configurable terminal count within a timer.

1 20. The method of claim 18, wherein detecting the write data comprises
2 detecting a transition in the write data.

1 21. The method of claim 18, wherein converting the write data comprises:
2 providing a first polarity of the magnetic head flux signal in response to a first
3 level of the write data; and
4 providing a second polarity of the magnetic head flux signal in response to a
5 second level of the write data.

1 22. An article of manufacture comprising a program storage medium
2 readable by a computer, the medium tangibly embodying one or more programs of
3 instructions executable by the computer to perform a method of operating a write
4 channel of a magnetic head controller, the method comprising:
5 establishing a write stabilization period while remaining in a read mode of
6 operation;
7 transmitting write data when the stabilization period expires;
8 detecting the write data to cancel the read mode of operation; and
9 converting the write data to a magnetic head flux signal in response to
10 detecting the transmitted write data.

1 23. The method of claim 22 wherein establishing the write stabilization
2 period comprises setting a configurable terminal count within a timer.

1 24. The method of claim 22, wherein detecting the write data comprises
2 detecting a transition in the write data.

1 25. The method of claim 22, wherein converting the write data comprises:
2 providing a first polarity of the magnetic head flux signal in response to a first
3 level of the write data; and
4 providing a second polarity of the magnetic head flux signal in response to a
5 second level of the write data.